

CLAIMS

1. An image display device, comprising:
a circuit (2) for generating drive signals
5 (SHR, SHG and SHB) from an input image signal (SIN);
a plurality of pixels (Z) including a light
emitting element (EL) for emitting light of a
predetermined color of red (R), green (G) or blue (B) by
being applied with said drive signal (SHR, SHG and SHB)
10 supplied for each color from said circuit (2);
an adjustment information retrieve means (4)
for obtaining information relating to light emission
adjustment of said light emitting element (EL); and
a level adjustment circuit (2B) provided in
15 said circuit (2), for changing a level of an RGB signal
(S22) before divided to said drive signals (SHR, SHG and
SHB) for respective RGB colors based on said information
obtained by said adjustment information retrieve means
(4).
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2. An image display device as set forth in claim
1, wherein said level adjustment circuit (2B) changes a
level (V0 to V5) of a direct current voltage (VREF)
supplied to a circuit block (21) in said circuit (2) and
25 proportional to luminance of said light emitting element

(EL) .

3. An image display device as set forth in claim 2, comprising

5 a D/A converter (23) for performing digital-analog conversion on said RGB signal (S22);

wherein

said adjustment information retrieve means (4) retrieves said information relating to changes over
10 time for each of RGB colors; and

said level adjustment circuit (2B) changes a reference voltage (VREF) to be supplied to said D/A converter (23) based on said information of respective RGB colors obtained by said adjustment information
15 retrieve means (4).

4. An image display device as set forth in claim 2, further comprising:

a plurality of data lines (Y) for connecting
20 by each color said plurality of pixels (Z) repeatedly arranged by a predetermined color arrangement; and

a data holding circuit (2A) for holding for the respective RGB colors time-series pixel data composing said RGB signal (S22) and outputting the pixel
25 data held for the respective colors as said drive signals

(SHR, SHG and SHB) in parallel with corresponding plurality of said data lines (Y);

wherein said level adjustment circuit (2B) adjusts a level of said drive signal (SHR, SHG and SHB) of at least one color by changing a level (V0 to V5) of said direct current voltage (VREF) for necessary times based on said information obtained from said adjustment information retrieve means (4) at a timing that pixel data of a different color is input to said data holding circuit (2A).

5. An image display device as set forth in claim 4, wherein a control signal input to said level adjustment circuit (2B) for changing a level (V0 to V5) of said direct current voltage (VREF) is in common with a sample hold signal ($S_{S/H}$) for controlling said data holding circuit (2A).

6. An image display device as set forth in claim 4, wherein a control signal input to said level adjustment circuit (2B) for changing said direct current voltage is a signal (S4B) in synchronization with a sample hold signal ($S_{S/H}$) for controlling said data holding circuit (2A).

7. An image display device as set forth in claim 1, wherein:

said adjustment information retrieve means (4) and said level adjustment circuit (2B) comprises
5 a detection means for detecting a value changing along with luminance of pixels (Z) from pixels (Z) of each color; and

a memory means (31 or 41) for storing correspondence of said changing value and a level
10 adjustment amount of said RGB signal (S22).

8. An image display device as set forth in claim 1, wherein said adjustment information retrieve means (4) and said level adjustment circuit (2B) comprises

15 a clocking means for counting an accumulated light emission time of the pixels (Z); and

a memory means (31 or 41) for storing correspondence of said accumulated light emission time and a level adjustment value of said RGB signal (S22).

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9. An image display device as set forth in claim 1, wherein said light emitting element (EL) is an organic electroluminescence light emitting element.

25 10. An image display device, comprising:

a circuit (2) for generating drive signals (SHR, SHG and SHB) from an input image signal (SIN); and

a plurality of pixels (Z) including a light emitting element (EL) for emitting light of a

5 predetermined color of red (R), green (G) or blue (B) by being applied with said drive signal (SHR, SHG and SHB) supplied for each color from said circuit (2);

wherein said circuit (2) comprises

a motion detection circuit (22B) for
10 detecting motions by said image signal (SIN);

a level adjustment circuit (2B) for changing a level of an RGB signal (S22) before divided to said drive signals (SHR, SHG and SHB) for the respective RGB colors based on a result of the motion detection obtained
15 from said motion detection circuit (22B); and

a duty ratio adjustment circuit (70) for changing the duty ratio of a light emission time of said pixels (Z) based on the motion detection result.

20 11. An image display device as set forth in claim 10, wherein said level adjustment circuit (2B) changes a level (V0 to V5) of a direct current voltage (VREF) supplied from a circuit block (21) in said circuit (2) and proportional to luminance of said light emitting
25 element (EL).

12. An image display device as set forth in claim 10, wherein said light emitting element (EL) is an organic electroluminescence light emitting element.

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13. A color balance adjustment method of an image display device, comprising a plurality of pixels (Z) including a light emitting element (EL) for emitting light of a predetermined color of red (R), green (G) or blur (B) in accordance with an input drive signal (SHR, SHG and SHB), including:

a step of obtaining information relating to light emission adjustment of said light emission element (EL);

15 a step of changing a level of an RGB signal (S22) before divided to said drive signals (SHR, SHG and SHB) for respective RGB colors based on said information on light emission adjustment; and

a step of generating said drive signals (SHR, SHG and SHB) by dividing for the respective colors time-series pixel data composing said RGB signal (S22) and supplying to said pixels (Z) corresponding thereto.

14. A color balance adjustment method of an image display device as set forth in claim 13, wherein

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in the step of changing a level of said RGB signal (S22), a level (V0 to V5) of a direct current voltage (VREF) supplied to a circuit block (21) in a circuit (2) for performing signal processing on an image signal (SIN) and generating said drive signals (SHR, SHG and SHB), and proportional to luminance of said light emitting element (EL) is changed.

15. A color balance adjustment method of an image display device as set forth in claim 14, including

a holding step for holding for the respective RGB colors time-series pixel data composing said RGB signal (S22) when generating said drive signals (SHR, SHG and SHB);

15 wherein, in the step of changing a level of said RGB signal (S22), by changing the level (V0 to V5) of said direct current voltage (VREF) for necessary times based on said information obtained from said adjustment information retrieve means (4) at a timing that pixel data of a different color is input to said holding step, a level of said drive signal (SHR, SHG and SHB) of at least one color is adjusted.

16. A color balance adjustment method of an image display device as set forth in claim 13, wherein

the step of retrieving information relating to said light emission adjustment includes

a step of detecting a value changing along with luminance of pixels (Z) from pixels (Z) of the
5 respective colors; and

a step of determining a level adjustment amount of said RGB signal (S22) from said changing value based on correspondence of said changing value and a level adjustment amount of said RGB signal (S22) obtained
10 in advance.

17. A color balance adjustment method of an image display device as set forth in claim 13, wherein

the step of retrieving information relating
15 to said light emission adjustment includes

a step of counting an accumulated light emission time of the pixels (Z); and

step of determining a level adjustment amount of said RGB signal (S22) from the current accumulated
20 light emission time of the pixels (Z) based on the correspondence of said accumulated light emission time and the level adjustment amount of said RGB signal (S22) obtained in advance.

25 18. A color balance adjustment method of an image

display device as set forth in claim 13, wherein said light emitting element (EL) is an organic electroluminescence light emitting element.

5 19. A color balance adjustment method of an image display device, comprising a plurality of pixels (Z) including a light emitting element (EL) for emitting light of a predetermined color of red (R), green (G) or blue (B) in accordance with a drive signal (SHR, SHG and
10 HB) generated by performing signal processing on an input image signal (SIN), including:

 a step of detecting motions of an image to be displayed from said image signal (SIN);

 a step of changing a level of an RGB signal
15 (S22) before divided to said drive signals (SHR, SHG and SHB) for the respective RGB colors based on the result of said motion detection; and

 a step of changing a duty ratio of a pulse for controlling a light emission time of said light
20 emitting element (EL) based on said detection result.

 20. A color balance adjustment method of an image display device as set forth in claim 19, wherein

 in the step of changing a level of said RGB
25 signal (S22), a level (V0 to V5) of a direct current

voltage (VREF) supplied to a circuit block (21) in a circuit (2) for performing signal processing on an image signal (SIN) and generating said drive signals (SHR, SHG and SHB), and proportional to luminance of said light emitting element (EL) is changed.

21. A color balance adjustment method of an image display device as set forth in claim 20, including a holding step for holding for the respective RGB colors time-series pixel data composing said RGB signal (S22) when generating said driving signals (SHR, SHG and SHB);

wherein, in the step of changing a level of said RGB signal (S22), by changing the level (V0 to V5) of said direct current voltage (VREF) for necessary times based on said information obtained from said adjustment information retrieve means said holding stthat pixel data of a different color is input to said holding step, a level of said drive signal (SHR, SHG and SHB) of at least one color is adjusted.

22. A color balance adjustment method of an image display device as set forth in claim 19, wherein said light emitting element (EL) is an organic electroluminescence light emitting element.